

YCCC 6 Band Receive Bandpass filter

Based on W3LPL filter design By K1NQ 1/2007

This is a 6 band receive only filter designed to protect your receiver front end and provide 45dB reject at the stop bands. Relay K3 protects the filter during transmit via the PTT line. A 25-50ms delay must be used between transmit and PTT. Do not rely on your radio to provide adequate delay with out using the PTT. Your logging software must be set to allow a delay between PTT and time of 1st transmit. This filter will not work with VOX or QSK keying as you will damage the filter.

The “No-Power State” defaults to filter bypass. Bands are selected in either manual mode by the 7-position switch. An Automatic mode is also available by placing the 7-pole switch into automatic. To use automatic, an external 12V signal from a Band decoder or other source is required vi the 8 pin external Din jack. 1-6 are bands 10-160m respectively. Pin 8 is ground. All relays are driven by a small transistor to buffer external lines.

The filters use T50 cores for the inductors and NPO 100V or higher ceramic capacitors. Mica capacitor may also be used.

LED's are provided as indicators for 6 bands, TX on, and Automatic mode. A Stereo jack is used for 12Vdc and PTT lines.

Constriction is simple. Remember one pass thru the center of the toroid core constitutes a turn. A small coax cable jumper must connect relay K3 to relay K1 as marked on the pcb.

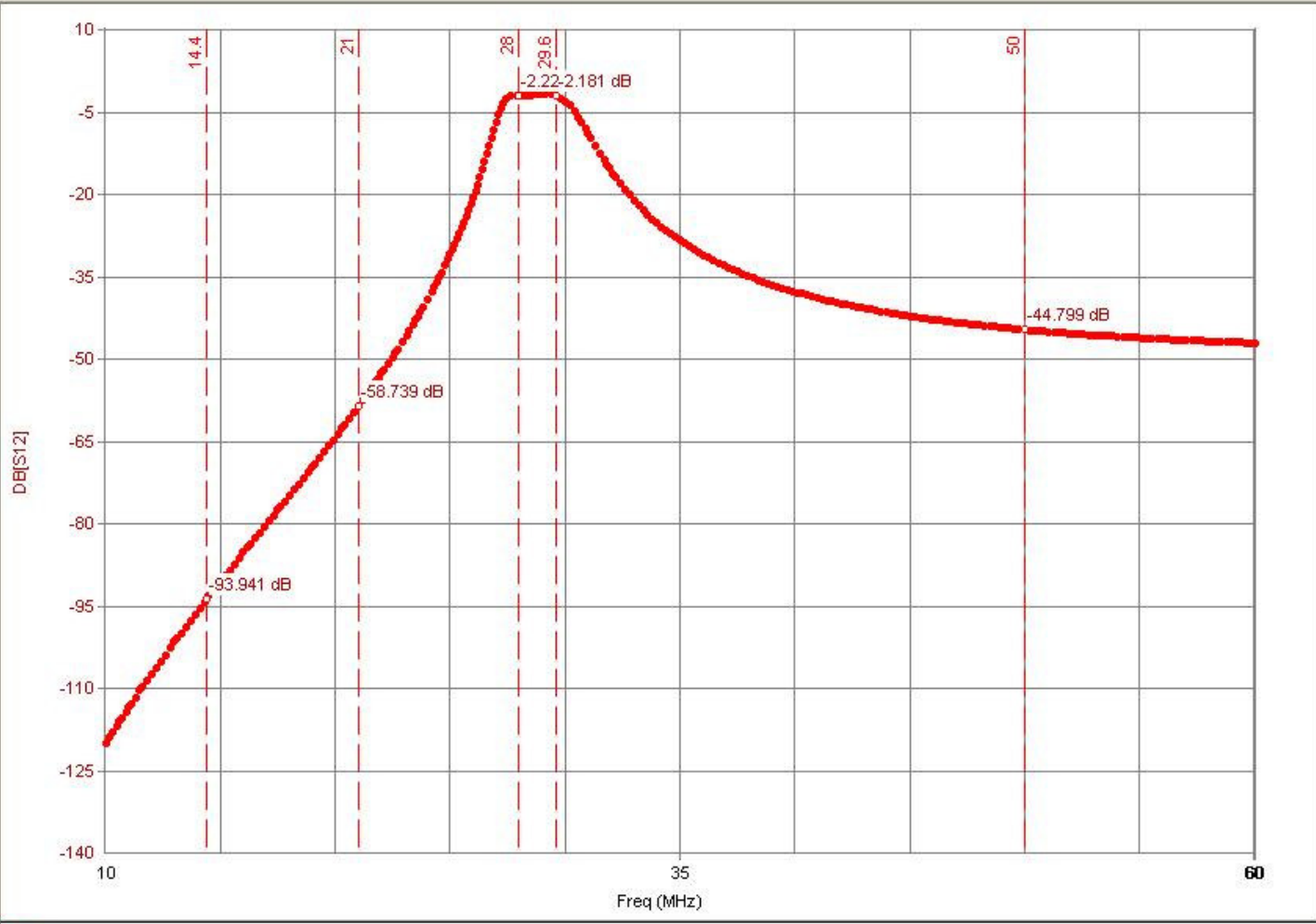
Failure to set up the PTT line may cause damage.

A Pictorial layout of the PCB, schematics, and parts list are included. A model of the 10m performance is included as a reference See www.k1ttt.net for more info on W3LPL receive filters.



Variable	Value
Tune %	5%
None	

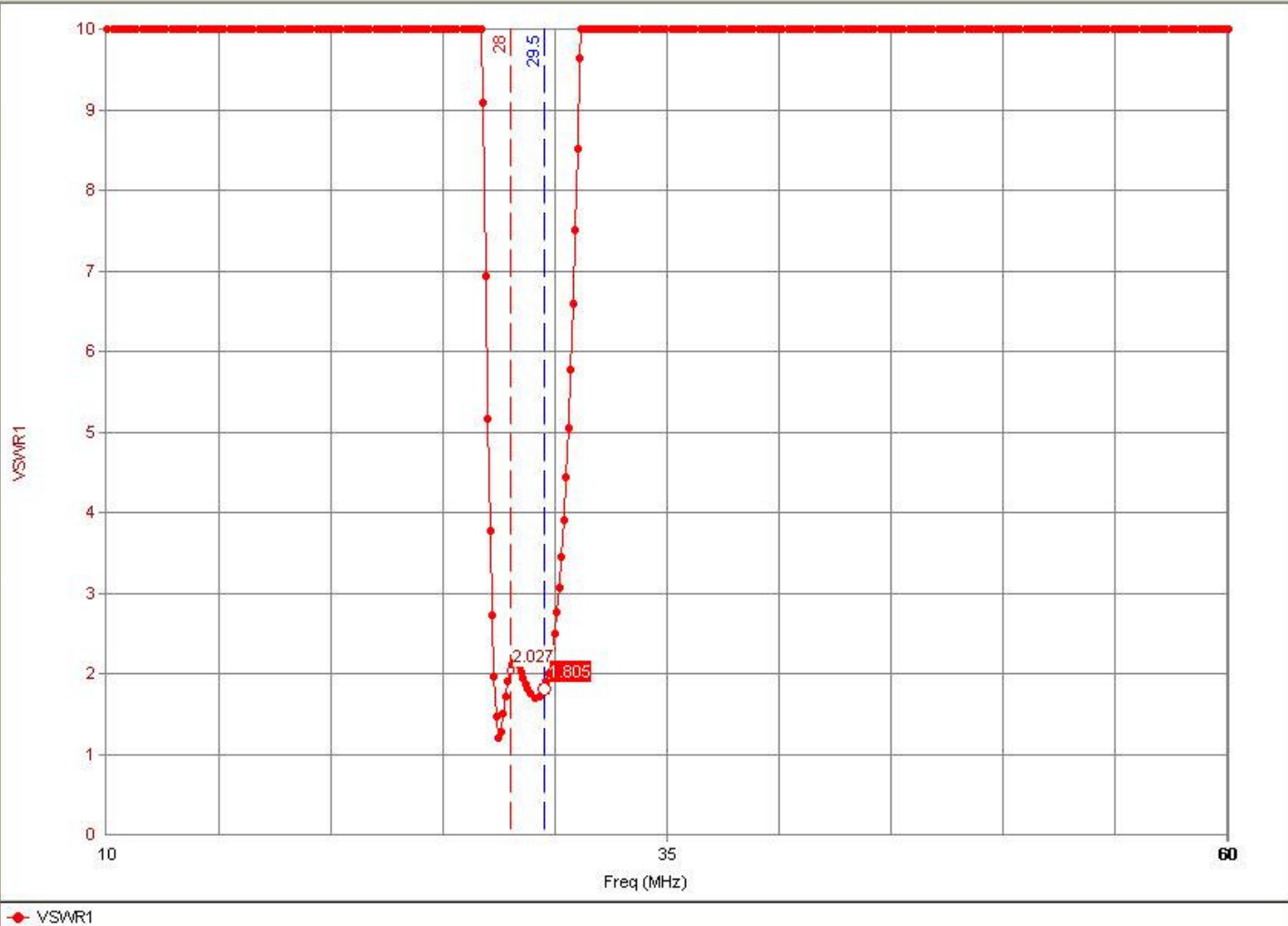
- Designs/Models
 - Sch1 (Schematic)
- Simulations/Data
 - Linear1 (10 to 60, 5)
- Outputs
 - Graph1
 - Graph2
- Equations
- Substrates
- Optimizations
- Yield
- Notes

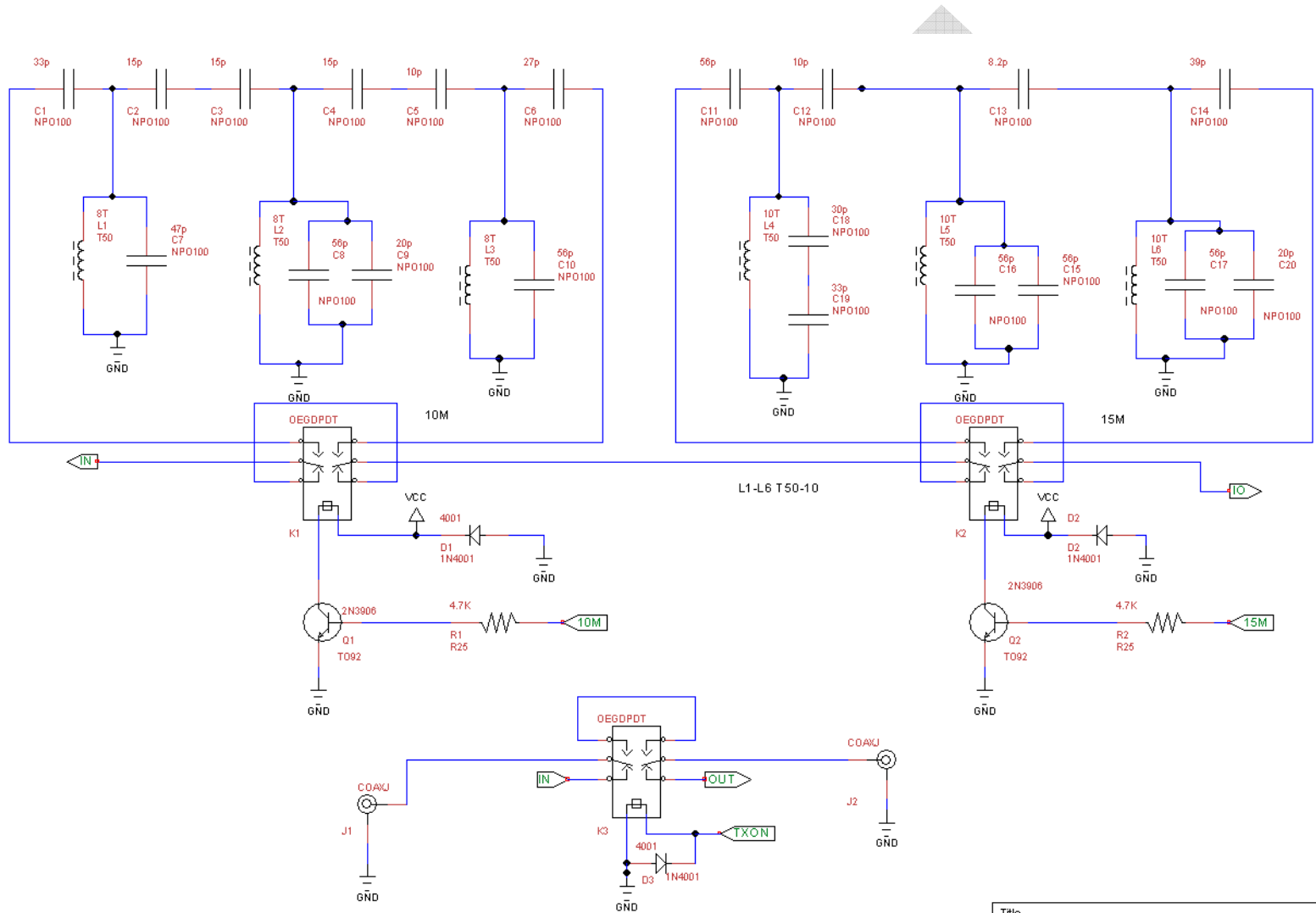




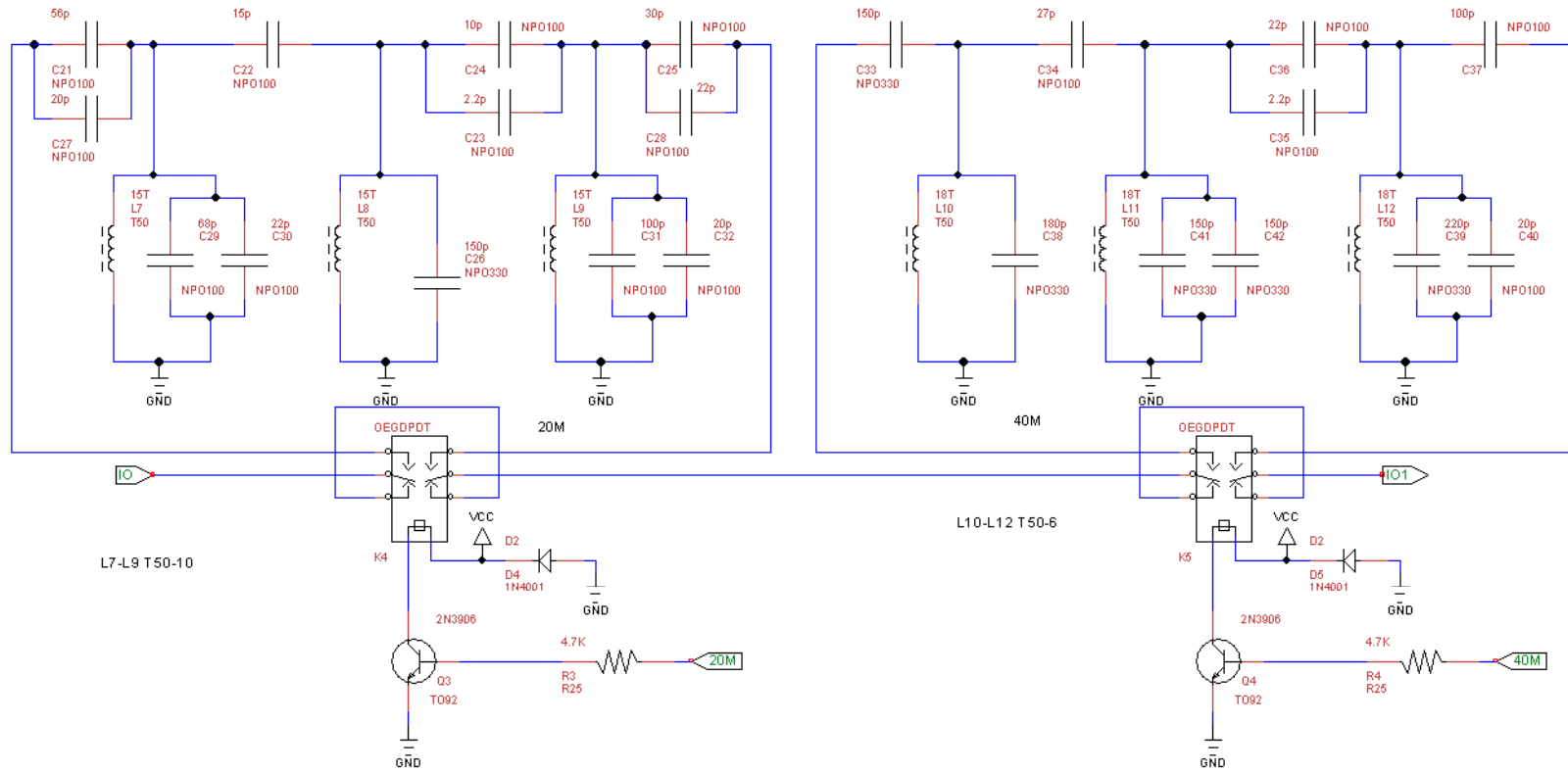
Variable	Value
Tune %	5%
None	

- Designs/Models
 - Sch1 (Schematic)
- Simulations/Data
 - Linear1 (10 to 60, 5)
- Outputs
 - Graph1
 - Graph2
- Equations
- Substrates
- Optimizations
- Yield
- Notes

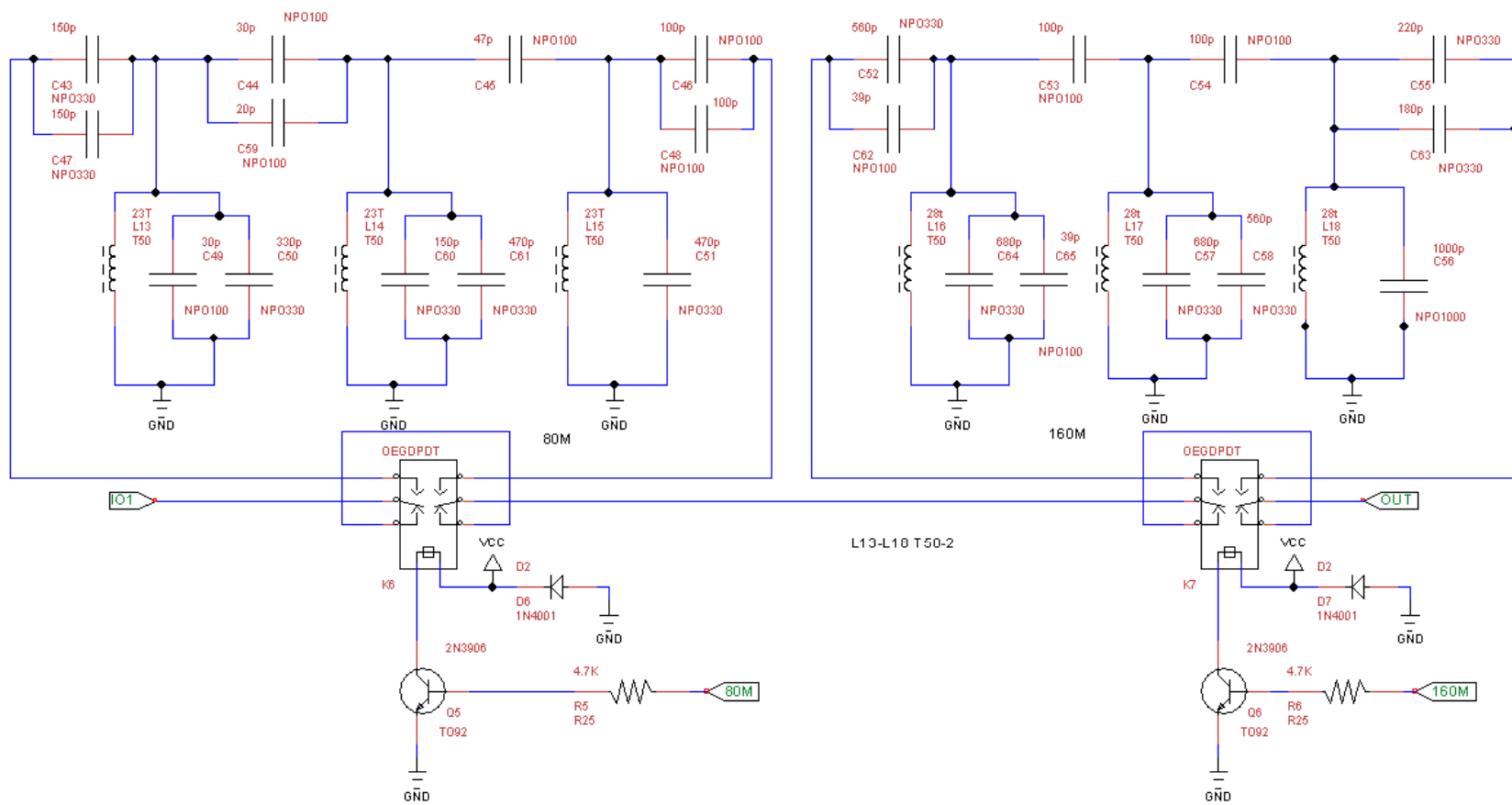




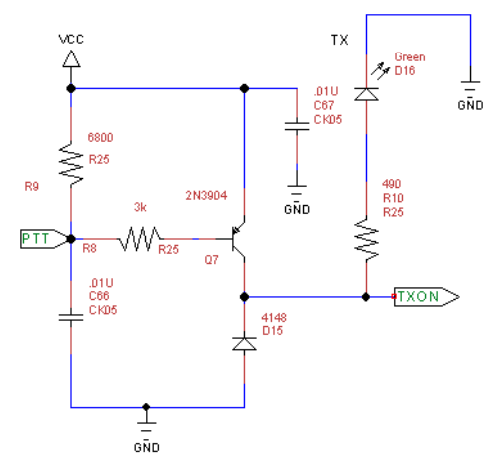
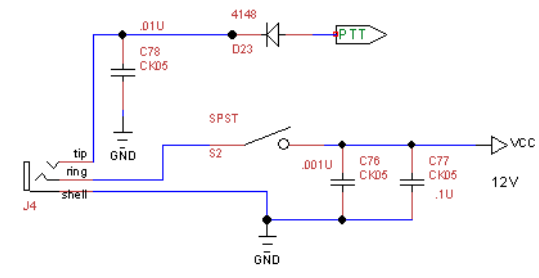
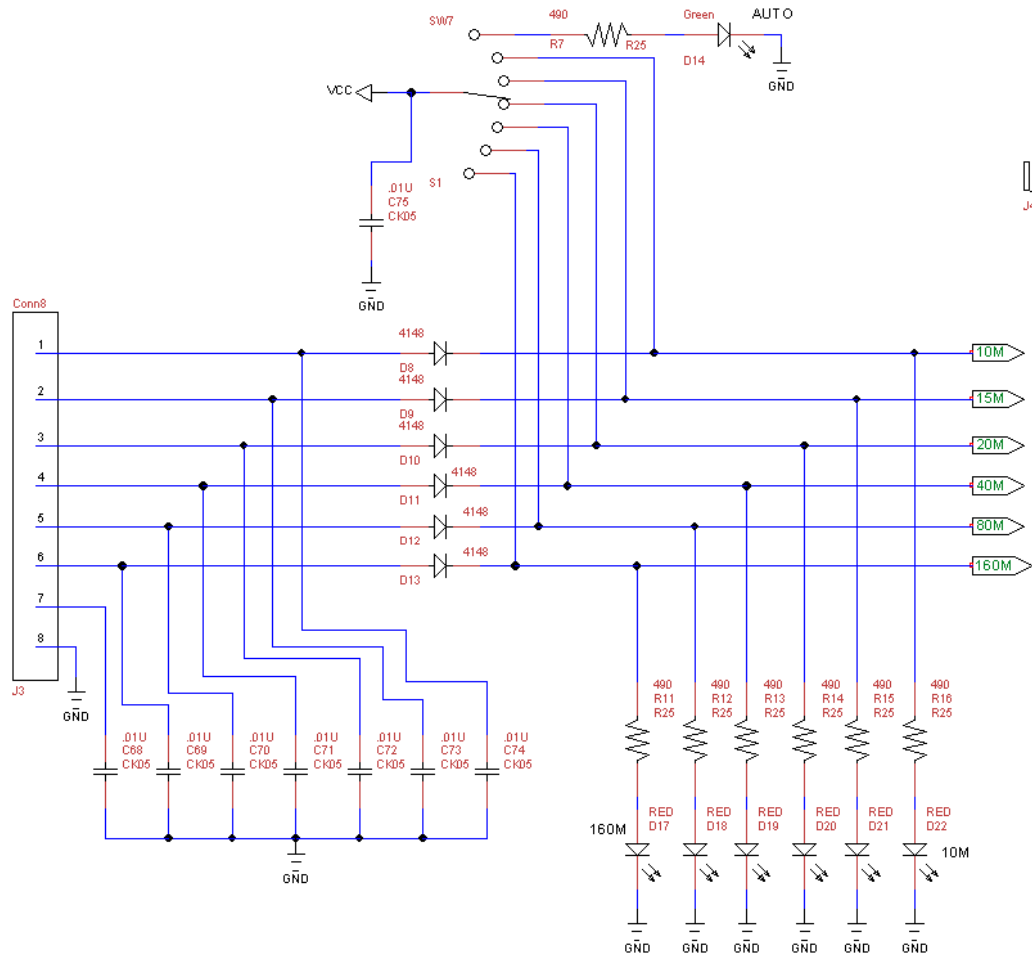
Title		
Author		
File	C:\Program Files\TinyCAD\10m.dsn	Document
Revision	Date	Sheets
1.0		1 of 1



Title		
Author		
File	C:\Program Files\TinyCAD\10m.dsn	
Revision	Date	Sheets
1.0		2



Title		
Author		
File	C:\Program Files\TinyCAD\10m.dsn	
Revision	Date	Sheets
1.0		3



Title		
Author		
File	C:\Program Files\TinyCAD\10m.dsn	
Revision	Date	Sheets
1.0		4



Reference	Quantity	Name	Description	Package	Pn	\$	TOTAL	
C1,C19	2	33p	Capacitor	NPO100	140-100N5-330J-RC	\$0.09	\$0.18	MOUSER
C10,C11,C15,C16,C17,C21,C8	7	56p	Capacitor	NPO100	140-100N5-560J-RC	\$0.09	\$0.63	MOUSER
C12,C24,C5	3	10p	Capacitor	NPO100	140-100N2-100J-RC	\$0.09	\$0.27	MOUSER
C13	1	8.2p	Capacitor	NPO100	140-500N2-8R2D-RC	\$0.08	\$0.08	MOUSER
C14,C62,C65	3	39p	Capacitor	NPO100	140-100N5-390J-RC	\$0.07	\$0.21	MOUSER
C18,C25,C44,C49	4	30p	Capacitor	NPO100	140-100N5-300J-RC	\$0.07	\$0.28	MOUSER
C2,C22,C3,C4	4	15p	Capacitor	NPO100	140-100N2-150J-RC	\$0.07	\$0.28	MOUSER
C20,C27,C32,C40,C59,C9	6	20p	Capacitor	NPO100	140-100N2-200J-RC	\$0.07	\$0.42	MOUSER
C23,C35	2	2.2p	Capacitor	NPO100	140-100N2-2R2D-RC	\$0.07	\$0.14	MOUSER
C26,C33,C41,C42,C43,C47,C60	7	150p	Capacitor	NPO330	140-102S6-331J-RC	\$0.23	\$1.61	MOUSER
C28,C30,C36	3	22p	Capacitor	NPO100	140-100N5-220J-RC	\$0.09	\$0.27	MOUSER
C29	1	68p	Capacitor	NPO100	140-100N5-680J-RC	\$0.09	\$0.09	MOUSER
C31,C37,C46,C48,C53,C54	6	100p	Capacitor	NPO100	140-100N5-101J-RC	\$0.15	\$0.90	MOUSER
C34,C6	2	27p	Capacitor	NPO100	140-100N5-270J-RC	\$0.07	\$0.14	MOUSER
C38,C63	2	180p	Capacitor	NPO330	140-102S6-181J-RC	\$0.18	\$0.36	MOUSER
C39,C55	2	220p	Capacitor	NPO330	140-102S6-221J-RC	\$0.18	\$0.36	MOUSER
C45,C7	2	47p	Capacitor	NPO100	140-100N5-470J-RC	\$0.07	\$0.14	MOUSER
C50	1	330p	Capacitor	NPO330	140-102S6-331J-RC	\$0.23	\$0.23	MOUSER
C51,C61	2	470p	Capacitor	NPO330	140-102S6-471J-RC	\$0.23	\$0.46	MOUSER
C52,C58	2	560p	Capacitor	NPO330	140-102S6-561J-RC	\$0.25	\$0.50	MOUSER
C56	1	1000p	Capacitor	NPO1000	140-102S9-102J-RC	\$0.31	\$0.31	MOUSER
C57,C64	2	680p	Capacitor	NPO330	140-102S6-681J-RC	\$0.25	\$0.50	MOUSER
C66,C67,C68,C69,C70,C71,C72,C73,C74,C75,C78	11	.01U	Small Capacitor	CK05	140-50Z2-103M-RC	\$0.08	\$0.88	MOUSER
C76	1	.001U	Small Capacitor	CK05	140-50Z5-102M-RC	\$0.07	\$0.07	MOUSER
C77	1	.1U	Small Capacitor	CK05	140-50Q9-104Z-RC	\$0.26	\$0.26	MOUSER
D1,D2,D3,D4,D5,D6,D7	7	4003	small diode	1N4001	512-1N4003	\$0.05	\$0.35	MOUSER
D10,D11,D12,D13,D15,D23,D8,D9	8	4148	small diode	DO-39	512-4148	\$0.05	\$0.40	MOUSER
D14	1	Green	small LED RA 5MM	LUMEX	696-SSF-LXH100MGD	\$0.30	\$0.30	MOUSER
D16	1	YELLOW	small LED RA 5MM	LUMEX	696-SSF-LXH100MYD	\$0.30	\$0.30	MOUSER
D17,D18,D19,D20,D21,D22	6	RED	small LED RA 5MM	LUMEX	696-SSF-LXH100ML1D	\$0.30	\$1.80	MOUSER
J1,J2	2	COAXJ	Coax Jack	uhf	27-7350	\$0.99	\$1.98	OCEANSTATE
J3	1	Conn8	conn8	DIN 8 F	ES11	\$1.93	\$1.93	OCEANSTATE
J4	1		StereoPhone Jack		30-502	\$1.33	\$1.33	OCEANSTATE
K1,K2,K3,K4,K5,K6,K7	7	OEGDPDT	OEGDPDT	OEGDPDT	677-OMI-SH-212D	\$2.00	\$14.00	MOUSER
L1,L2,L3	3	8T	Inductor	T50-10	#16 8t	\$0.65	\$1.95	OCEANSTATE

L10,L11,L12	3	18T	Inductor	T50-6	#20 18t	\$0.65	\$1.95	OCEANSTATE
L13,L14,L15	3	23T	Inductor	T50-2	#22 23t	\$0.65	\$1.95	OCEANSTATE
L16,L17,L18	3	28t	Inductor	T50-2	#24 28t	\$0.65	\$1.95	OCEANSTATE
L4,L5,L6	3	10T	Inductor	T50-10	#18 10t	\$0.65	\$1.95	OCEANSTATE
L7,L8,L9	3	15T	Inductor	T50-10	#20 15t	\$0.65	\$1.95	OCEANSTATE
Q1,Q2,Q3,Q4,Q5,Q6	6	2N3906	Bipolar	TO92	2N3906	\$0.10	\$0.60	OCEANSTATE
Q7	1	2N3904	Bipolar Resistor (USA Style)	TO92	2N3904	\$0.10	\$0.10	OCEANSTATE
R1,R2,R3,R4,R5,R6	10	4.7K	Resistor (USA Style)	R25	RQ4.7K	\$0.05	\$0.50	OCEANSTATE
R10,R11,R12,R13,R14,R15,R16,R7	10	490	Resistor (USA Style)	R25	RQ470	0.05	\$0.50	OCEANSTATE
R8	10	3k	Resistor (USA Style)	R25	RQ3.0K	0.05	\$0.50	OCEANSTATE
R9	10	6800	Resistor (USA Style)	R25	RQ6.8K	0.05	\$0.50	OCEANSTATE
S1	1	SW7	SP12T Switch		30-15100	2.4	\$2.40	OCEANSTATE
S2	1	SPST	Single Pole Switch		10002	1.5	\$1.50	OCEANSTATE
	1		KNOB 10-1/8L x 7-3/8W x 3-3/8H Bottom of Form		KN-7114	0.65	\$0.65	OCEANSTATE
	1			CASE	PB250	12.95	\$12.95	OCEANSTATE
	1		PCB			21	\$21.00	K1NQ
OTHER			1/8" STEREO PLUG		30-489	0.6		OCEANSTATE
	1		8 PIN DIN MALE		EA11	3.89		OCEANSTATE
	3		RG316 or RG174 #22 MAGNET WIRE		3 FEET	0.18		OCEANSTATE
			#24 MAGNET WIRE					
			#22 MAGNET WIRE					
			#20 MAGNET WIRE					
			#18 MAGNET WIRE					
			#16 MAGNET WIRE					

TOTAL \$84.86